MANAGEMENT PROBLEMS AND OPPORTUNITIES

Problems, recreational value and opportunity within the Cuivre River Basin were studied by the Corps of Engineers, St. Louis District (1991) and by Bachant and Martindale (1982). As part of the Corps study, a public meeting was held to assess local interests in and concerns for the basin. Attendees ranked major problems on a scale of zero (no problem) to four (big problem). They identified and rated the following: water quality (3.2); erosion (2.9); flooding (2.8); and environment (2.6). Other specific problems identified by the Corps study included: 1) loss or degradation of natural heritage features; 2) stream erosion and sedimentation; 3) lack of flood control; 4) need for more recreational opportunities, particularly fishing; and 5) need for more information on water quality. Bachant and Martindale conducted a survey of professional resource managers to identify recreational values and problems in major watershed throughout the state. Twenty-five professionals responded to questions about conditions in the Cuivre River Basin. Problem severity was scored from zero (no problem) to 10 (severe problem). Intensive agriculture (7.1) and poor land use (6.7) were rated the two most serious problems in the watershed, followed by: environmental intrusions (4.0); pollution (3.8); channel modifications (3.6); bank or shoreline development (3.5); intensive recreational use (3.4); water withdrawals (3.0); sand and gravel dredging (2.9); and water impoundments (2.7). Our evaluations of habitat conditions in the basin indicate the presence of 1) insufficient riparian tree corridors; 2) streambank erosion and 3) sedimentation and deterioration of aquatic habitat. Increasing educational opportunities and interest about riparian and stream management could help improve public involvement and land management along the basin's streams.

OBJECTIVES AND STRATEGIES

Objectives for the Cuivre River Basin Plan incorporate fisheries-related needs identified in the Missouri Department of Conservation Strategic Plan, Fisheries Division Operational Plan (FY 91-95), Stream Areas Program Plan, the Stream Access Acquisition Plan and this document. Four areas of concern--riparian and aquatic habitat protection, aquatic community protection, public use and public awareness--will be addressed. Objectives are presented in order of priority. The implementation of objectives will depend upon their status in Fisheries Division operational plan priorities, available manpower and funding.

Riparian and Aquatic Habitat Protection

GOAL I: Improve or maintain riparian and aquatic habitats in the Cuivre River Basin.

Status - Problems affecting riparian and aquatic habitats include insufficient tree corridors, streambank erosion, pollution from animal waste and municipal sources and soil erosion. There are five active and one completed Special Area Land Treatment projects (SALT and EARTH projects) in the basin. Fish kills periodically occur but there are no chronic fish kill areas. In addition, many natural features are in a degraded condition. Despite these problems, MCD fish collections throughout the drainage have

indicated that most streams are in fair condition and support a wide variety of native fishes. As long as suitable habitat is available, it is expected that a natural biotic community will be present.

<u>Objective 1.1</u>: Over a 20-year period, maintain or increase above current levels the proportion of third-order-and-larger stream reaches having a minimum tree corridor width of 100 feet on each streambank.

Strategy: Protecting and enhancing the riparian tree corridor is essential to obtaining quality aquatic habitats. The tree corridor along streams significantly influences many components of the stream ecosystem including water quality, groundwater absorption and recharge to the stream, stream habitats and the food web. We believe that we can make significant improvements in habitat quality by developing a prioritized list of streams needing rehabilitation or protection. Using this list we can concentrate our efforts on a few streams rather than attack problems on every stream in the basin in the basin at once. This approach will allow us to begin where the need is greater and wisely apply limited manpower and financial resources.

Tasks:

- * Develop criteria for prioritizing streams (e.s.,presence of rare species, amount of riparian tree corridor including that in public ownership, size of stream, permanence of water, presence of game fish, natural features, critical habitat, etc.).
- * Conduct field investigations to provide necessary background information for prioritizing criteria.
- * Using criteria, develop a prioritized list of streams in the basin needing riparian and aquatic habitat restoration and protection measures.
- * Implement riparian and aquatic habitat restoration and protection measures on streams according to their designated priority utilizing the Streams For The Future program and other state and federal assistance programs.
- * Document, in order of stream priority, the current condition of riparian corridors and streambanks by videotape, aerial photography or satellite imagery.
- * Reassess, according to stream priority, the condition of riparian corridors and streambanks in 20 years by videotape, aerial photography or satellite imagery.

Objective 1.2: Meet state standards for water quality.

Strategy: Protecting riparian corridors and implementing appropriate soil conservation measures in watersheds (e.g., Special Area Land Treatment projects [SALT and EARTH], farm Conservation Plans, etc.) will help reduce sedimentation of waterways. Streams also need protection from other pollutants. By keeping local citizenry informed on water quality issues we believe they will be more likely to report violations of water quality laws. Adequate enforcement of existing water quality laws is crucial to obtaining satisfactory water quality.

Task:

* Cooperate with other state and federal agencies to investigate pollution and fish kill reports, evaluate Clean Water Act permits and assist with the enforcement of existing water quality laws.

- * Inform the public of water quality problems (e.g., excessive siltation, animal waste runoff, etc.) and solutions affecting aquatic habitats through media contacts, personal contacts and literature development.
- * Train and involve Stream Team in water quality monitoring and advocacy in the Cuivre River Basin.
- * Make presentation and provide technical assistance for SALT and EARTH projects, as requested, to county Soil and Water Conservation District boards who govern these projects.

Aquatic Community Protection

Goal II: Protect native aquatic fauna in the Cuivre River Basin.

Status - Seventy-one fish species, 16 mussel species and five species of crayfish have been identified in creel surveys, fish kills and field collections made from 1941-1992. Among these animals, the ghost shiner and hickorynut mussel are on the Missouri watch list. Sport fish include smallmouth bass, largemouth bass, channel catfish, flathead catfish, black crappie, white crappie, white bass, walleye, freshwater drum, common carp, bluegill and green sunfish. Exotic fish found in the basin include bighead carp, grass carp (lakes) and mosquitofish. The zebra mussel, a potentially harmful exotic mussel, is found nearby in the Mississippi River.

Objective 2.1: Maintain or improve the current species diversity of fish and invertebrate communities.

Strategy: High priority should be placed on protecting native, rare and endangered species and community assemblages with natural areas or other special features. Focusing enhancement and protective efforts on a few species can be effective in helping other species that share the same habitat. Detecting changes in faunal composition and abundance can be accomplished by conducting periodic surveys of fish and invertebrate communities. Determining reasons for any change, however, will be more difficult since a variety of factors (e.g., inter- and intra-specific competition water quality, habitat condition, etc.) could be involved.

- * Document locations and identify unique fish assemblages associated with natural features and special habitats such as oxbow lakes, spring branches and marshes for possible acquisition or protection through landowner easements.
- * Assist with recovery efforts for any state or federally-listed rare or endangered species discovered in the basin.
- * Survey fish communities every 10 years using a standardized sampling technique to document changes in species abundance and distribution. This will include establishing "large fish" monitoring stations on the mainstem Cuivre, West Fork Cuivre and North Fork rivers where electrofishing and netting surveys can be conducted.

- * Complete fish-habitat improvement projects at MDC-managed areas where native fish habitat is limited.
- * Recommend fish-habitat improvement projects on private lands whenever the opportunity arises.
- * Conduct research projects to investigate reasons for significant changes in faunal abundance and distribution and identify corrective measures, if appropriate.
- * Conduct a survey of mussels on all fifth order and larger streams.

<u>Objective 2.2</u>: Maintain or improve populations of game fish while maintaining a stable and diverse fish community.

Strategy: Proper management of game fish populations will depend on obtaining adequate samples to determine their current condition. In the Cuivre River system this effort will be hampered by steep river banks and poor access to the streams. Current data are insufficient for setting specific management objectives. High priority will be place on obtaining status information and setting management objectives for channel catfish, flathead catfish, smallmouth bass, largemouth bass and crappie. Once adequate information is obtained, future management efforts will be directed toward setting appropriate regulations and protecting and improving fish habitat.

Tasks:

- * Conduct a literature review to determine "ideal" population parameters for Missouri riverine populations of flathead catfish, channel catfish, smallmouth bass, largemouth bass and crappie.
- * Develop and initiate a regular sampling regime or high priority game fish to evaluate the health of their populations and provide baseline data for management decisions.
- * Write a game fish management plan for streams in the basin.
- * Complete fish habitat improvement projects at MDC-managed areas where game fish habitat is limited.
- * Recommend fish habitat improvement projects on private lands whenever the opportunity arises.

<u>Objective 2.3</u>: Prevent detrimental impacts on native fauna of the Cuivre River Basin by exotic aquatic species.

Strategy: Controlling the introduction of exotic species into the state is the easiest way to prevent detrimental impacts to native fauna. Once a detrimental exotic species becomes established, research will be needed to seek ways to contain it or eliminate it from the system.

- * Continue Division participation on the Missouri Aquaculture Advisory Council (MAAC) and other organizations and advocate the introduction of exotic fauna into state waters.
- * Develop statewide regulations and/or promote legislation to prohibit the introduction of harmful exotic fauna into Missouri waters.
- * Monitor for potentially harmful exotic species (e.g., zebra mussel, bighead carp) when a threat to native fauna is likely.
- * If harmful exotics are observed, submit research proposals to evaluate impacts and possible control measures.

Public Use

GOAL III: Increase stream-related recreational opportunities in the Cuivre River Basin.

Status - Out of 37 Missouri watersheds, the Cuivre River drainage ranked 32nd in recreational value because of intensive agricultural use and poor land management practices (Bachant and Martindale 1982). Its worth is expected to increase in the future because of its close proximity to St. Louis. Fishing opportunities exist for smallmouth bass, largemouth bass, flathead catfish, black crappie, white crappie, channel catfish, white bass, walleye, drum, common carp and bluegill in the basin's streams. Anglers rated the overall quality of fishing as average. Approximately 88 miles of the West Fork Cuivre, North Fork Cuivre and Cuivre rivers have permanent, fishable pools of water, and 43 miles are floatable. Between 1983 and 1988, the number of fishing trips to the Cuivre River averaged 17,742 trips per year. This level of use was lower than that observed for the Grand, Salt and Fabius rivers (Weithman 1991). Public access to major streams is poor; currently, there are only three MDC public accesses on these streams. None of these accesses has a concrete boat ramp and their total river frontage is less than 0.5 mile. The Old Monroe Access is particularly inadequate because it is too small, noisy from heavy traffic on nearby U.S. Highway 79 and has limited parking.

Objective 3.1: Over a 10-year period, increase angling trips to 10%.

Strategy: By improving the overall quality of the fishery from average to good we expect angling use to increase (see Objective 2.2). Angler use of streams should increase as the availability of stream accesses is improved and the public becomes more aware of available fishing opportunities.

- * Conduct telephone surveys at 10 year intervals to assess angler use and the quality of the fishery.
- * Provide a total of six stream accesses to create a minimum of 2.5 miles of river frontage open to the public. The six accesses should be provided as follows: four on the Cuivre River, one on the West Fork Cuivre River and one on the North Fork Cuivre River. This would require purchasing four sites and abandon one site (Old Monroe) having an easement. At least two sites should be designed with boat

launching facilities.

- * Develop, if feasible, at least one stream access with facilities accessible to disabled anglers.
- * Publicize new accesses and submit fishing articles for local distribution and publication in the *Missouri Conservationist* or *All Outdoors*.

<u>Objective 3.2</u>: Develop additional non-consumptive recreational opportunities on public lands including lands managed by MDC and other public entities.

Strategy: Non-consumptive use of streams in the basin should increase as access to streams is improved and the public becomes more aware of available stream-related recreational opportunities.

Tasks:

- * Encourage or assist the Missouri Department of Natural Resources in developing better stream access at Cuivre River State Park.
- * Support the concept of a big river ecosystem park at the mouth of the Cuivre River, as proposed by the Corps of Engineers (1991).
- * Produce and distribute a pamphlet about non-consumptive recreational opportunities available in the basin.

Public Awareness

GOAL IV: Increase public awareness and promote wise use of aquatic resources in the Cuivre River Basin.

Status - Throughout Missouri public awareness of stream-related issue is low. At the 1991 Missouri Conference on Rivers and Streams, held in Columbia, MDC Director Jerry Presley indicated that building public awareness of stream conservation issues and programs is the greatest challenge facing water-resources agencies. Results released in 1991 from a recent Gallup poll of 606 Missourians, indicated that five of six respondents (83%) could not name any stream conservation program by name. Since private landowners own 99% of the Cuivre River's watershed, it is logical to assume that their participation is essential for making any significant improvements to stream quality. Motivating landowners to accept help with their stream problems will be a major challenge. In a Gallup poll of 11,400 Missouri farm operators, 557 farmers (residing in the Northeastern Riverbreaks zoogeographic region which includes the Cuivre River watershed) responded to questions about streams. Forty-three percent of the cooperators indicated that they had problem with a stream on their property. However, only 29% indicated that they would welcome technical assistance (Gallup 1992). Similarly according to MDC Fisheries Management District 4 staff, interest in the MDC Streams For The Future program from this watershed has been extremely low, there are no approved private landowner cooperative projects. In addition, local participation on Stream Team (an adopt-a-stream program sponsored by the

Conservation Federation of Missouri) has been low; as of January 16, 1992, only three Stream Teams had adopted a stream in the watershed.

<u>Objective 4.1</u>: Over a 10-year period, increase the current level of public awareness of local stream resources and good stream management practices by at least 10%.

Strategy: We want to raise the public's overall level of knowledge about streams by providing them with as many opportunities to learn more about streams as possible. If citizens recognize streams as a valuable resource, they are more apt to participate in improving them.

- * Conduct telephone surveys at 10-year intervals to assess public awareness of local stream resources and problems, technical assistance programs and stream management.
- * Provide educational materials about streams, good watershed management practices, demonstration areas and available technical assistance programs for elementary and high school curricula, special interest groups (Farm Bureau, Sierra Club, etc.), other governmental agencies, local media, fairs and other special events.
- * Actively solicit the participation of landowners along designated high priority streams in stream improvement and education programs (see Objective 1.1).
- * Attend planning meeting for Agricultural Stabilization and Conservation Service and Soil and Water Conservation District cost sharing programs and promote good stream and fisheries management practices.
- * Conduct one landowner workshop on stream management per year in Troy, Montgomery City or Wellsville, Missouri.
- * Establish one stream demonstration area (or landowner cooperative project involved in the "Neighbor to Neighbor" program) in Lincoln, Montgomery, Audrain, Pike and Warren counties. *Make public presentations to encourage the enrollment of at least two Stream Teams per year.
- * Encourage Cuivre River State Park personnel to incorporate stream ecology and stream stewardship presentations into their summer program.